

REMARKS

Claims 9-18 are pending. Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

I. OBJECTION OF CLAIM 9 UNDER 35 U.S.C. § 112

Claim 9 was rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Applicant respectfully disagrees. For example, support for such language is shown on page 11, lines 4-19; page 12, lines 1-10; Fig. 8; Fig. 9; and elsewhere.

II. REJECTION OF CLAIMS 9-18 UNDER 35 U.S.C. § 103(a)

Claims 9-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ouyang et al. (US publication 2004/0256639) in combination with Lin et al. (US publication 2005/0035369), Yeo et al. (US publication 2005/009263), Chidambarrao et al. (US publication 2005/0164477), and Currie et al. (US publication 2004/0173812). Withdrawal of the rejection is respectfully requested for at least the following reason.

A prima facie case of obviousness requires that the cited references teach or suggest all of the claim limitations and also that some suggestion or motivation to combine the references be available.

Claim 9 recites forming PMOS devices with entire source to drain channel regions formed *within the substrate along a first crystallographic orientation* and NMOS devices with entire source to drain channel regions formed *within the substrate along a second crystallographic orientation*, which is not taught by the cited references.

The Office Action relies upon Ouyang et al. to teach the elements of claim 9. Ouyang et al. disclose a method for forming a *vertical channel* of a field effect transistor. (Abstract). The source region and channel region are independently lattice strained with respect to the body region (substrate). (Abstract). Only the drain region 162 is formed within the substrate below other portions of the vertical column or mesa

5000. (Fig. 5, 6, and 7). The vertical column 5000 comprises the source region 164, a body region 163, a drain region 162 and has a channel region 165 on sidewalls of the vertical column 5000. [0030]. In contrast, the entire source to drain channel regions, source regions, and drain regions of claim 9 are formed within the substrate.

The Office Action concedes that Ouyang et al. (US publication 2004/0256639) in combination with Lin et al. (US publication 2005/0035369), Yeo et al. (US publication 2005/009263), Chidambarrao et al. (US publication 2005/0164477), and Currie et al. (US publication 2004/0173812) teach forming a vertical MOS having a source, drain, channel formed above the substrate, but fail to teach a lateral MOS or MOS having source, drain, and channel formed in the substrate. The Office Action continues by stating that it would have been obvious to one of ordinary skill in the art to form the source, drain, and channel in the substrate to form a lateral MOS having high channel mobility. Applicant respectfully disagrees with this statement. In fact, the summary of Ouyang et al. teach away from doing so and forms vertical devices instead. Ouyang et al. teach that it is not practical to integrate a nMOSFET on a (100) plane and a pMOSFET on a (110) plane using conventional silicon technology, but it is easy to do so with vertical devices. [0015]. In contrast, Applicant explains some of the difficulties that can be encountered with typical layout tools that have 90 degree variations, such as are a consumption, but suggests layout tools with 45 degree variations and additional benefits obtained from employing such layout tools. (Page 10, lines 10-18).

Therefore, it can be seen that Ouyang et al. and the other cited references, alone or in combination, fail to teach or suggest all the elements of claim 9. Claims 10-18 depend from claim 9 and are not taught by the cited references for at least the above reasons. Accordingly, withdrawal of the rejection is respectfully requested.

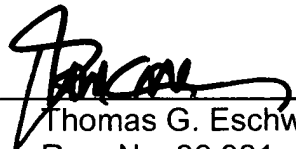
III. CONCLUSION

For at least the above reasons, the claims currently under consideration are believed to be in condition for allowance.

Should the Examiner feel that a telephone interview would be helpful to facilitate favorable prosecution of the above-identified application, the Examiner is invited to contact the undersigned at the telephone number provided below.

Authorization is hereby given to the Commissioner to charge any other fees due as a result of the filing of this response to Deposit Account Number 20-0668, TI-36595.

Respectfully submitted,
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CERTIFICATE OF MAILING (37 CFR 1.8a)

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop AF, Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: March 21, 2006


Christine Gillroy